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CONTENTS

A Partial List of the Birds of Keam Canyon, Arizona (frontispiece) ..... *A. K. Fisher* 33

Feathers Beside the Styx ..... *Edgar A. Mearns* 36

Some Unusual Nests of the Bullock Oriole (3 halftones) ..... *C. S. Sharp* 38

The Phainopepla ..... *M. French Gilman* 42

The Significance of Trinomials ..... *Witmer Stone* 43

The Author of "Birds of the Cape Region of Lower California" (halftone) 46

List of Water Birds of Lake Valley, Central Sierra Nevada Mts., Cal. (halftone) *Milton S. Ray* 47

The Summer Birds of Washoe Lake, Nevada ..... *F. S. Hanford* 50

Status of the Bicolored Blackbird in Southern California ..... *F. S. Daggett* 52

CORRESPONDENCE.

On Certain 'Modern' Tendencies ..... *Wilfred H. Osgood* 53

A Protest ..... *Wm. Dutcher* 53

An Answer ..... *P. M. Silloway.* 54

EDITORIALS 56

Notice to Members of Southern Division 57

An Open Letter ..... *Fred M. Dille* 57

Obituary: Thomas E. Slevin, George Shoenberger Chambliss, Thomas McIlwraith 57

Minute of Club Meetings 58

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KEAM CANYON, ARIZONA.

THE·CONDOR
A·MAGAZINE·OF
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Volume V March-April, 1903 Number 2

A Partial List of the Birds of Keam Canyon, Arizona.

BY A. K. FISHER.

IN the summer of 1894 the writer had occasion to visit Keam Canyon, Arizona, for the purpose of studying the mammals and birds of the region. To reach this interesting locality it was necessary to make a stage trip of over twenty-four hours duration, northward from the town of Holbrook on the Santa Fe Pacific Railroad.

Leaving Holbrook on the morning of July 17, 1894, we soon ascended the limestone rim of the Little Colorado Valley and passed out upon the mesa beyond. Off to the northward the distant landscape was clothed in a delicate purple, the varying shades producing an effect of surpassing beauty and one not easily forgotten. From this point of vantage it could be seen that beyond the Le Roux wash twenty miles away the route gradually ascended toward the distant horizon, and promised to be more interesting than the sandy waste immediately before us. The long journey through the day and night was at times somewhat monotonous, but as one of the horses had previously never worn harness, it was prudent to be watchful. North of the Le Roux wash we passed one of the big corrals with long extending wings, now falling into decay, into which in the early days of plenty the Navajos used to drive whole bands of antelope. It was admirably situated for the purpose in a depressed valley, the steep sides of which together with the supplementing fence of interwoven juniper and pinyon boughs, made it impossible for the animals to escape when once they had entered.

Late in the afternoon a heavy thunderstorm broke upon us and the deluge soon filled the washes, so that within one short hour their beds of dry, burning sand were swept by roaring, seething masses of turbulent waters, which made traveling in the low country anything but certain. At one place just at dusk we passed a lot of naked Navajos who had taken advantage of the rain and were busily engaged in drowning out prairie dogs by directing the streams of water into

the burrows. As the young animals were nearly grown and each burrow contained from six to eight individuals, the Indians must have received a generous supply of meat. After night-fall our journey was less wearisome, the rain had ceased, the treacherous washes were less frequent or formidable, the unruly horse had settled down to an even pace, and we rode along with comparative comfort. From time to time the shadowy form of a passing Indian, or the dim outlines of the hogans showed that we were among the Navajos and gradually approaching our destination.

Keam Canyon lies within the Moki Reservation, eighty miles north of Holbrook and about one hundred miles northeast of the San Francisco mountains, the highest peak of which is plainly visible from the bluff shown in the accompanying plate. The Moki name of this mountain is Ne-vat-i-kiobi, which means the house of the snow. At the trading post of Mr. T. V. Keam, in the vicinity of which most of the observations in the present paper were made, the trend of the canyon is towards the northwest, but a few miles lower down it turns to the west and broadens into a more extensive valley. Thirteen miles from this post is the Mesa, on which the Moki pueblos of Tewa, Sichumovi, and Wolpi are situated. The portion of the valley which interests us is from 400 to 800 yards in width and is depressed one hundred feet or more below the surface of the surrounding mesa. The side walls are picturesque and present an endless variety of forms, from clear cut perpendicular cliffs to masses of giant boulders interspersed with a more or less luxuriant growth of pinyon and juniper. Erosive action has left its mark in the softer material, and produced caves of varying size which furnish homes for some of the birds and mammals of the region. Out-croppings of coal are quite numerous, and heaps of ash, together with bits of pottery, show where the aborigines utilized this fuel in the preparation of their wares.

The canyon is well known to many anthropologists and others who are interested in the ritual customs of the Moki, and who have traversed the long stretches of desert between the little town of Holbrook and the cliff dwellings on the First Mesa to witness the celebrated snake dance and other Tusayan ceremonies. Mr. Keam's genial hospitality towards the many strangers who have visited this far-off land is proverbial and has earned for him a wide reputation.

Anyone unacquainted with the conditions of bird life in the arid regions would be disappointed with the small number of species found at Keam Canyon, and would be surprised at the meagre representation of most of them. Although considerable time between July 18 and August 3 was devoted to exploring the canyon and surrounding mesa for the purpose of observing birds, only thirty-nine species were found, and of these seven were included on single records. The doves (*Zenaidura macroura*) were fairly common throughout the canyon, and considerable numbers visited the little rivulet that flowed from a covered spring in a side canyon back of the house, where they bathed and drank at all times of day from sunrise until long after dark. Turkey vultures (*Cathartes aura*) were almost always present, and about fifty roosted in a clump of dead pinyons below the northwest rim of the canyon within plain view of the house. Among the birds of prey the little sparrow hawks (*Falco sparverius deserticolus*) were the commonest, and were often seen hunting for lizards and insects, or flying about their nesting places in the crevices and erosions of the canyon walls. One prairie falcon (*Falco mexicanus*) was seen on July 18, and a week later a fine adult duck hawk (*Falco peregrinus anatum*) flew close to the house toward evening and disappeared along the edge of the cliffs beyond. Although no golden eagles (*Aquila*) were seen at large, as many as a dozen were counted at the Moki pueblos, where they are used in con-

nection with certain ceremonies. The western redtail (*Buteo borealis calurus*) was seen daily, and on one occasion a few characteristic feathers lying beside a half-eaten jackrabbit showed almost conclusively the author of the good work The great horned owl (*Bubo*) was not seen, but its wierd notes were occasionally heard at dusk and early morn. Tracks were seen of the roadrunner (*Geococcyx californianus*) which is well known to the Mokis under the name of Hosh-bo-a.

A solitary hairy woodpecker (*Dryobates villosus* subspec?) which busied itself among some pinyons and junipers along the canyon wall was the only representation of the family observed. A fine specimen of poorwill (*Phalænoptilus nuttalli*) was secured on the evening of July 19 as it was flying over the canyon bottom in front of the house. It would have been impossible to have seen it but for the light color of the ground over which it passed, like a fleeting shadow, in pursuit of insects. The Mokis who saw the specimen were much interested in it and designated it by the name of Ho-witz-ko. Nighthawks were common and were heard booming every evening. A colony of white-throated swifts (*Aeronautes melanoleucus*) bred in the holes in the canyon walls back of the house, and were almost always in sight, skimming rapidly along the edge of the mesa or darting out high over the valley into which, however, they rarely descended. A female black-chinned hummer (*Trochilus alexandri*) was secured on July 31, from its perch on a dead-topped juniper, and a fine male rufous hummer (*Selasphorus rufus*) was killed July 30 among some flowers along the edge of a trail. Several other hummers were seen at different times, but at too great a distance for positive identification. Among the flycatchers the Arkansas kingbirds, ash-throated flycatchers and Say phœbes were seen, the latter, which lived among the giant boulders of the canyon walls, being the most abundant. Pinyon and Woodhouse jays were seen every day on the mesa and a few were seen flying across the valley. Although the season was not far enough advanced for the pine nuts to contain kernels, nevertheless cones were found which had been mutilated by these jays.

The raven (*Corvus corax sinuatus*) is one of the commonest birds in the valley, and on account of its great fondness for corn and melons is one of the most troublesome to the Mokis. Hundreds congregate along the edges of the cliffs and other prominent places in the vicinity of the gardens, and should the old women who are placed on guard to watch the fields from early morn until nightfall relax their vigilance for a moment, the birds are sure to take advantage of the opportunity. The gray vireo (*Vireo vicinior*) was tolerably common, though its presence might easily have been overlooked except for the characteristic song which was often heard while the birds remained hidden amid the dense foliage of the pinyon and juniper. A thrasher, which the Mokis called Kot-to-zi, was not uncommon, but was extremely wary and difficult of approach. It was not satisfactorily identified until July 31 when a chance shot secured a specimen which proved to be the Bendire thrasher (*Toxostoma bendirei*). This capture would have been a surprise but for the taking of an immature bird at Holbrook a short time previously. This species, which is commonest throughout the area occupied by the giant cactus, evidently has extended its range to this remote corner of Arizona by a route along the Colorado and Little Colorado Rivers and their tributary valleys.

The following list includes all the species observed. Though the number represented is not large and the species are not especially interesting, the fact that the list covers a comparatively little known region is considered a sufficient excuse for its publication:

Zenaidura macroura
Cathartes aura
Buteo borealis calurus
Aquila chrysaetos
Falco mexicanus
Falco peregrinus anatum
Falco sparverius deserticolus
Bubo virginianus pallescens
Geococcyx californianus
Dryobates villosus (subspec?)
Phalænoptilus nuttalli
Chordeiles virginianus henryi
Aeronautes melanoleucus
Trochilus alexandri
Selasphorus rufus
Tyrannus verticalis
Myiarchus cinerascens
Sayornis saya
Aphelocoma woodhousei
Corvus corax sinuatus
Cyanocephalus cyanocephalus
Icterus bullocki
Carpodacus mexicanus frontalis
Chondestes grammacus strigatus
Spizella socialis arizonæ
Amphispiza bilineata deserticola
Petrochelidon lunifrons
Tachycineta thalassina
Stelgidopteryx serripennis
Lanius ludovicianus excubitorides
Vireo vicinior
Mimus polyglottos leucopterus
Toxostoma bendirei
Salpinctes obsoletus
Catherpes mexicanus conspersus
Parus inornatus ridgwayi
Psaltriparus plumbeus
Polioptila plumbea
Sialia arctica

Feathers Beside the Styx.

BY EDGAR A. MEARNS.

STRANGERS to the Yellowstone National Park are apt to regard the truest statements respecting its wonders as nothing short of startling. Possibly their confirmation may cause the pendulum of credulity to swing too far in the opposite direction. Certain it is that some of the tales of the Park to which credence is generally attached require scientific corroboration, and none more so than those which relate to supposed death pens in which animals, large and small, perish in numbers.

When traveling with my wife through the Yellowstone region, fourteen years ago, vague accounts reached us of hollows and places filled with deadly gases into which all creatures passing must leave hope and life behind. These whisperings, later, culminated in the story of the tragic death of "Wahb," the grizzly, from the facile pen of Ernest Thompson Seton. On returning to the Park, in April, 1902, I learned that to doubt the existence of a valley or canyon of death, bestrewn with the decaying carcasses of bears and other beasts, somewhere in that region, was to display hopeless ignorance of fact. Men of high position and undoubted veracity had testified, as eye-witnesses, to these things; but Captain Hiram M. Chittenden, U. S. A., an engineer officer charged with carrying on extensive improvements now in progress in the Yellowstone National Park, tells me that, notwithstanding his great familiarity with the topography of the Park, no such place is known to him. When such an alleged locality was reached the huge dead beasts had vanished, and no more than a fragment of bone such as might be found anywhere in the region was visible.

Though we were unable to set foot on the bank of a veritable River Styx, any

tourist may conveniently visit the "Stygian Cave," at the Mammoth Hot Springs, and find there the bodies of many little birds whose spirit passed away as they entered. There are many such spots about the mineral "formation," almost two miles in extent, around these boiling springs, where Fort Yellowstone is located. Mrs. Pitcher, wife of the present Park Superintendent, showed me some of these "Stygian" caves, in April, 1902; and, thereafter, I often examined such "bird caves" as I had found, or searched for others. In any hollow capable of holding the heavy gas (supposed to be carbon dioxide) fatal to animal life, dead birds were liable to be found, provided that the usual accompaniment of heat and moisture (from steam), and sulphurous odors (from emanating gases) were found. Most of the dead creatures were birds; but there were, besides, many insects, and a few small mammals. Doubtless larger animals may have been killed in some of these pockets filled with gas, although the flame of a candle was rarely extinguished before it came near the ground. When picking up dead birds I always took the precaution to hold my breath. Moisture and a distinct warmth to the ground were always felt. The effect on bird bodies was to cause rapid decay, the flesh quickly disappearing, then the bones, and lastly, the feathers. Upon the latter a caustic action was observed, the bases of the feathers being eaten away, until, in some instances, only the tips of the feathers remained and retained the form of the bird, at last sinking flat upon the ground and soon leaving no trace. The remains were sometimes so indefinite that it was impossible to identify all of the species, or to make an exact count. In fact, I made no systematic effort to observe and record regularly the effects of these caves on the bird life of the locality, although my note books contain some data.

On first visiting the caves, in April, remains of the magpie, Townsend solitaire, pink-sided junco, pine siskin, and Rocky Mountain nuthatch were found.

May 16, many pink-sided juncos, warbling vireos, and a few Cassin purple finches, and one Macgillivray warbler were among the victims, at the few caves then known to me. At the "Stygian Cave" proper, in dangerous proximity to the deadly gas, a pair of Townsend solitaires were engaged in building a nest in a hollow of the rock. On my next visit the nest had been finished, but both of the little architects were lying dead at the bottom of the cave, pathetically near each other, their outspread wings touching one another. They perhaps descended to gather building materials, or to drink.

During June and July dead birds were seen whenever the caves were visited. Among them were always some Townsend solitaires, Audubon warblers, and Louisiana tanagers. It almost seemed that the Stygian caves possessed some peculiar attraction for the unfortunate birds; but it is probable that a damp and shady nook offered a sufficient allurement, and that curiosity prompted some to follow companions that had preceded them.

August 1, 1902, eleven birds were found dead within the cavern known as the "Stygian Cave," as follows: Two pine siskins, four pink-sided juncos, (all young of the year, with striped underparts), two warbling vireos, two Louisiana tanagers (adult female and young of the season), and one mountain chickadee.

During the September migration an unusually large number of birds perished, but I have kept no record of them. The largest number were pink-sided juncos.

October 15, 1902, dead birds were found in twelve caves. In all fifty-eight birds and and a mouse (*Peromyscus texanus subarcticus* J. A. Allen) were counted. These were: one Clarke nutcracker, six pine siskins, thirty-five pink-sided juncos, one green-tailed towhee, one Louisiana tanager, four red-breasted nuthatches, four mountain chickadees, three Townsend solitaires, and three western robins.

Of these, four pink-sided juncos, three red-breasted nuthatches, and two mountain chickadees were fresh enough to be skinned, and were preserved as specimens. Two days later, the only fresh corpses were a mouse, a grasshopper, and a Rocky Mountain creeper, which latter was preserved, having just died. During the ensuing week no additional birds were asphyxiated.

Although unable to estimate the number of birds that perished in the caves adjacent to the Mammoth Hot Springs during the past season, I am of the opinion that the number reached into the hundreds if not thousands. Birds were found dead in about thirty different caves and hollows about the "formation," between Snow Pass and the Mammoth Hot Springs Hotel, near which latter the lowest "bird cave" was discovered. At the suggestion of Mrs. Charles B. Byrne, who visited the St. gian caves in 1902, I requested the Park Superintendent to have the most important caves provided with wire screens for the purpose of keeping birds from entering them, and this will doubtless be done before another season, as the Superintendent and his wife are much interested in the matter.

Following is a list of the species of birds which I found dead in the "Stygian" caves, from April to December, 1902:

1. *Pica pica hudsonica* (Sab.). Black-billed Magpie.
2. *Nucifraga columbiana* (Wils.). Clarke Nutcracker.
3. *Carpodacus cassini* Baird. Cassin Purple Finch.
4. *Spinus pinus* (Wils.). Pine Siskin.
5. *Junco mearnsi* Ridgw. Pink-sided Junco.
6. *Oreospiza chlorura* (Aud.). Green-tailed Towhee.
7. *Piranga ludoviciana* (Wils.). Louisiana Tanager.
8. *Vireo gilvus* (Vieill.). Warbling Vireo.
9. *Dendroica auduboni* (Towns). Audubon Warbler.
10. *Oporornis tolmiei* (Townsend). Macgillivray Warbler.
11. *Certhia americana montana* (Ridgway). Rocky Mountain Creeper.
12. *Sitta carolinensis nelsoni* Mearns. Rocky Mountain Nuthatch.
13. *Sitta canadensis* Linn. Red-breasted Nuthatch.
14. *Parus gambeli* Ridgway. Mountain Chickadee.
15. *Myadestes townsendii* (Aud.). Townsend Solitaire.
16. *Merula migratoria propinqua* Ridgway. Western Robin.

Some Unusual Nests of the Bullock Oriole.

BY C. S. SHARP, ESCONDIDO, CAL.

The popular idea of an oriole's nest seems to be that it is always pensile, supported wholly from the top and the lower part, large and purse-shaped, hanging free to sway with every breeze. I have never seen an illustration of one that was not of this description.

In my observations of nests of the Bullock oriole (*Icterus bullocki*) I have found two distinct types, and presume the same forms are found in the nests of its nearest eastern relative (*galbula*), the nests of others of the genus hardly coming into comparison.

These two types are the truly pensile and what is generally termed the semi-pensile form, although, in reality, it is not pensile at all. With *bullocki* the latter

seems to be the more common form. Nests of this type may be placed in an upright fork, or attached to a branch or twig on one side only, the other side being supported by some nearby leaf, stem or branch, or may be placed between two or more nearly parallel branches or close against one with the small lateral twigs embracing it as with encircling arms.

NEST OF BULLOCK ORIOLE, NO 1.

The truly pensile is the "hangbirds" nest of the picture books, and has its support wholly at the top, depending from a small fork or from two near branches, with the opening rather small and the nest below expanding into the well-known form. This type is generally the most pleasing in effect and shows more elaborate and painstaking workmanship. It is usually placed near the end of some low-drooping branch well hidden among the leaves, and is so strongly built that it may stand the wind and rains of several seasons before the final dissolution.

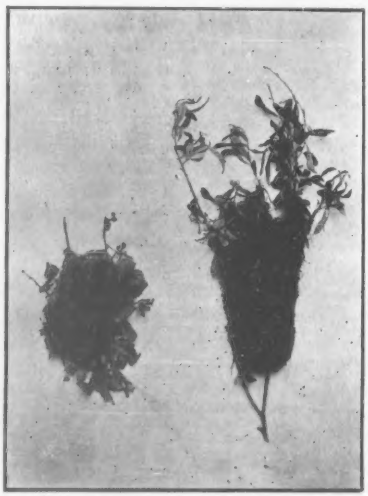
The semi-pensile is a very different type, seldom artistic and generally frail, rarely lasting over one season. It would almost seem as if the main object sought for in its construction was the strength of the bottom. This, and perhaps an inch up on the sides is thick and strong, but above the walls are thin and transparent, and scarcely more than a frame work, but strongly woven and securely fastened to the supporting branches. This type is usually placed near the end of an upward inclining branch, which may be attached to it for its whole length; sometimes at the end of a drooping branch, but in any case it derives its support almost wholly from the side. The bottom never extends down to the base of any fork, a space of an inch or more always being left, but the nest is usually built as low down in the fork as its bulk will allow, thus gaining an additional basal support; the top is generally somewhat flaring being built out to convenient twigs.

NEST OF BULLOCK ORIOLE, NO. 2.

In the material used in construction the pensile nest shows the greatest variety and the most careful selection. More string and long horse hairs are used, both highly necessary, as the weight is sustained wholly from the top, and these woven through the nest and over the supporting branches give a strength to the whole

structure that is marvelous. In general the material is the same in all: dry grass, shreds of willow or inner cottonwood bark, fine weed stems, horsehair, string, etc., with a lining of soft grasses, and down from the willow or cottonwood piled in, thick and soft. Sometimes the down will be worked into the outside of the nest as well, with pleasing effect. As a rule there is not much variation between the various nests of the different types, but occasionally some rare genius goes beyond his fellows and evolves a structure beautiful and unique. Three of these extra-ordinary nests are herein described.

When first seen by me the first nest was, without exception, the most beautiful nest of this species I ever saw. It was taken from a white oak tree, quite an unusual location in this section, and was near the end of a small drooping branch about fifteen feet from the ground. The twigs to which it was attached formed a fork, and a few inches above, another small twig extended downward in the same direction. The nest was wholly suspended from these, the twigs, with some of the leaves attached being worked into it for a little distance down the sides and back. With these exceptions and two or three long horse hairs it was composed wholly of wild oats and rather loosely woven. A few of the oat heads show on the inside where they were worked into the nest itself, but almost all are on the outside, the long stems being worked into their heads which stood out in a beautiful and graceful fringe all around and below for from one to three inches or more. The effect was striking and unusual. Very unfortunately much handling had destroyed a large part of these before a photograph could be secured. The dimensions in inches are as follows: Depth outside (extreme) 14; depth inside (front) to opening 5½; to opening, 8; depth inside to opening 5½; diameter outside, 7; diameter inside, 4; circumference 21. These measurements are of the nest proper and do not include the fringe of oat heads. The opening is rather triangular in shape from the position and angles of the supporting twigs and is rather more than an inch greater from front to rear than from side to side. The back is built up into the fork and nearly to the branch itself and is six inches higher than in front.



AVERAGE NEST OF BULLOCK ORIOLE, AND NEST NO 3 (RIGHT).

If birds have an eye for the beautiful in their homes, as well as for utility, (and who can say that they do not?) then surely the architects of this structure were thorough artists. It would be hard to conceive of an oriole's nest more artistic or generally pleasing in effect.

The second nest stands rather in a class by itself, being neither pensile nor semipensile in form, and is the only nest of the species I ever saw that was built in that way. It is more like the nests of the other branches of the Icteridæ, and it is hard to believe it is an oriole's nest at all. It is supported almost wholly from the base, one side being built squarely over a small branch which crosses a little to one side of the middle. The other side is supported at the very top by a

small leaf-twig. There are no other supports whatever. This was taken from a sycamore at an elevation of almost twenty feet and was near the end of a somewhat drooping branch where it was well hidden by the large leaves. This also has wild oats for its chief material, the stems being woven closely into the nest itself leaving the heads to stand out for a couple of inches all around. Inside them is grass and quite a little willow cotton at the bottom and a few horse hairs woven in. In its dimensions it is also unusual: depth, outside, 4 inches, inside 3; diameter outside, 5, inside, 3; circumference, 13. This nest is so radically different from the ordinary nest of the species that one cannot help wondering what spirit of retrogression (one might say) possessed its little builders.

The third nest is of the semi-pensile type, but shows a skill in its manufacture that places its builders as far ahead of the ordinary semi-pensile architects as are the weavers of the truly pensile type. When first seen by me at the top of a small willow sapling I took it to be a swarm of bees and regretted that my collecting outfit did not contain suitable apparatus for gathering them in, for I do not like to have the little busy bee waste its sweetness on the desert air and in hollow trees if I can very well prevent it and besides hollow trees are much better adapted to screech owls. The resemblance to a swarm was very great and I was within thirty feet of it before a female oriole flying from the nest showed me my error. It was placed between the two branches of a nearly upright fork in the very top of a small clump of willows, about twelve feet from the ground. One small branch was completely buried in the nest for nearly its whole length, the other secured to it at the top, a little above and a little below the middle and lying close against the nest all the way. The top is rather flaring, being built out to the numerous leaf-twigs, many of which with their leaves are worked in on the top and back. The material used in its construction is wholly shreds of dry grass and of the bark of weed stems, the general color effect being very dark throughout. There are a few pieces of the stems on the outside with the bark partially detached and woven in, the stems hanging loose. For scientific weaving this nest is a marvel and resembles fine crochet work more than anything. The average nest of the Bullock oriole will have bits of string and plenty of horse hair woven in to bind and strengthen it, but this has nothing of the sort. I can not find even one piece of horse hair in the whole nest, nothing but fine and apparently short shreds of grasses and weeds. Holding it before a light one can plainly see the longer foundation lines running through and the marvelous way in which it is all worked together. All the length of the nest the sides are thin and of the same delicate workmanship, the bottom is harder and thicker, but the same material is used throughout. The builders of this nest were the most wonderfully skilled workers of their species that I ever saw and were doubtless old and experienced; no novices could ever have constructed such a nest. The photograph, while showing well the remarkable shape and size fails to give a perfect idea of the fine weaving and material, that only an examination of the nest itself can do.

For comparison I have included in a photograph the nest of another pair of orioles that can fairly be called an average nest, both for size, manner of construction and materials and also attachment to the branch. The measurements of both nests are here given: depth inside, nest 3, 9 inches; average nest 4½ inches; depth outside, nest 3, 9½ inches; average nest 6 inches; diameter inside nest 3, 3½ inches; average nest 3 inches; diameter outside, nest 3, 4 inches; average nest, 3½ inches; greatest circumference, nest 3, 12 inches; average nest, 12 inches. In

both nests the top is flaring and extends out to supporting twigs for an inch or more, the measurements do not include these extensions.

These three nests show peculiarities in shape and in the materials used that would seem to indicate a fixed purpose and design on the part of their builders rather than the result of chance. The wild oats used in the first two is unusual, even in small quantities, yet these birds chose it in preference to everything else, although other materials that satisfied other orioles were in abundance. Concealment seems to have been disregarded, in the first nest especially, for the large bulky structure of wild oats would be a rather difficult thing to hide in the foliage of a white oak and there seemed to be very little if any attempt at it. In the second nest the white bark of the sycamore and large lighter colored leaves made it more easy. In the third nest the fact that what were undoubtedly the same birds built a new nest a few rods away when this was taken, using the same sort of material and building a nest of the same shape and nearly the same size, and of the same fine weaving would show an individual preference that was as decided as it was remarkable. This second nest was not disturbed and the birds raised their brood in peace. I shall watch the locality with interest this season and if the same birds return I am sure I shall know them by their handiwork.

The Phainopepla.

BY M. FRENCH GILMAN.

THIS bird always possessed a fascination for me, though as a small boy, my interest and admiration were mixed with some awe and respect. His easy graceful flight, dignified bearing and hearse-like plumage and colors placed him above the common herd and it were nearly sacrilege to throw rocks at him. This immunity did not extend to the nest and eggs could I but find them. For a long time I sought in vain and began to think they were like the fabled birds of paradise, or like "Topsy." But finally a nest of young birds was found in July and the ice was broken.

There is a dignity and an air of mystery about the bird that appeals to one. His silky, jet plumage, graceful crest and flaming red eyes form a striking combination, and the revelation, as he flies, of the snow patches on his wings is rather startling. As a musician he does not excel, merely repeating at intervals a flute-like note, or when another bird interferes with him, uttering a rasping reproach.

The phainopepla makes his appearance in this vicinity about the 15th of May and remains until about October though stragglers may be seen along in November. I once saw one during a snow storm the middle of January, and he was still dignified though bedraggled. Many of them spend the winter in the mesquite thickets of the Salton sink and Conchilla valley—in and around Indio, Walters, Martinez and Toros. Here they feed on the pinkish berries of the desert mistletoe which infests so many of the mesquite trees. A few of the birds remain all winter at Palm Springs also, feeding on mistletoe berries and the pepper berries of which they seem very fond. A pepper tree with several of the phainopeplas clinging to

its long graceful branches, eating the pink berries, forms a perfect picture, the remembrance of which lingers.

In watching the birds during the breeding season I observed that many of them took no interest in domestic affairs, but put in much of their time consorting with such mixed company as house finches, western tanagers, and grosbeaks, in fig and cherry orchards where some of them met violent deaths. These loafers nearly all looked like immature birds, being less glossy and dignified, and I have since discovered they were nestlings of the season hatched in early spring in the Conchilla valley and at Palm Springs, and perhaps as far as the lower Colorado river country. This was surprising to me as the birds nest so late in the San Gorgonio pass, Warner's ranch and other similar points. In my notes I find the earliest date for a nest to be Banning, June 11, 1893. Fresh eggs at other dates noted were: Warner's ranch, June 12, 1901, Banning, June 23, 25, 27, 28, and July 4, 1893. Young birds can be found all through July, and in only two instances were eggs found prior to June 23. For a month after they arrive or until about June 15, they seem to have nothing to do but amuse themselves and look pretty.

From my desert notes I take the following data: Palm Springs, March 24, 1897, three new nests and a nest of young just ready to "fly the coop;" March 20, 1899, three new nests and a nest of young a few days from the egg; March 6, 1900, nest with two fresh eggs. At Toros I made notes as follows: March 19, 1901, a set of two eggs partly incubated and a nest of half grown young. From this data it would seem that most of the young are hatched in March and April and that in some instances nest building must begin in the latter part of February. Possibly some of the birds rear two broods a year, but from the fact that some adult birds fail to pair and nest in this vicinity, I am inclined to think but one brood is raised. Probably those hatched in March on the desert return there to nest the following March; while those hatched in the San Gorgonio pass, in June and July, nest there the following summer.

The nest is placed in a sycamore tree if one is available, but nests may be found in oak, cottonwood, willow, or mesquite trees. Two eggs is the usual set, though three are sometimes found. I have a set of three found at Warner's ranch and have record of three in set twice at Banning, one found by Nathan Hargrave and one by myself. The nest is saddled on a branch, and in shape and composition very much resembles that of the wood pewee, though larger in size. The male bird does much of the incubating, being seen on the nest more than half the time and exhibiting more solicitude for the home than does his mate.

The Significance of Trinomials.

BY WITMER STONE.

THE following comments were originally prepared as a communication at the Twentieth Congress of the A. O. U. They are presented here at the request of the editor of THE CONDOR, but have been somewhat modified in the interests of brevity and clearness.

Nomenclature is not a subject of much popular interest, but since the varied faunal conditions of California bring it constantly to the attention of the systematic zoologists of the State, the present publication may be warranted.

The writer is speaking solely for himself, and no matter whether his views be ultimately endorsed or condemned by the A. O. U. Committee, he wishes to be understood as always advocating adherence to the Code and Check-list of the A. O. U. as the only way to secure uniformity—the main object for which we strive. He is also well aware much the same problems as here presented have already been discussed by Dr. Merriam, Dr. Allen and others, so that no originality is claimed, but merely an expression of opinion.

The use of trinomials, as established by the A. O. U. Code and adopted by most writers on vertebrates, is generally understood to be the designation of the geographic variants of a wide ranging form, which merge into one another where their ranges join—i. e., incipient species, produced by peculiar environments, but which are not yet entirely isolated from one another. The forms so designated are called subspecies.

As a convenient method of deciding whether a certain race or form should be regarded as a species or subspecies, actual intergradation between contiguous forms was adopted by the A. O. U. Code as the criterion.

When we come to name resident birds of coastwise islands which are but slightly differentiated from the mainland stock we at once confront a problem. Intergradation in the sense of interbreeding is impossible, consequently some writers maintain that all island forms must be regarded as *species* (binomial). But intergradation in the sense of overlapping of characters exists in many cases, and on this ground others term them *subspecies* (trinomial) and in practice a form is judged to be a species or subspecies by the *degree of difference* exhibited between it and its nearest geographic relative. This latter would seem to be the more logical course, since by the former plan we might just as well separate the song sparrows for instance of San Clemente and San Miguel Islands since they are geographically separated into two races, though as yet we cannot detect any tangible difference between them!

Extending the practice of recognizing overlapping of characters as intergradation, we find the geographically isolated though closely allied Florida burrowing owl listed as a subspecies of the bird of the plains, and other similar cases culminating with Mr. Nelson's recently described "subspecies" of the Cuban cliff swallow from western Mexico! This practice is severely criticised by some, but if we regard these forms as species solely on account of geographic isolation, what are we going to do with the martin of Southern Mexico which Mr. Nelson states is indistinguishable from the Cuban martin. Surely we cannot separate it purely on geographic grounds and if we do not separate it we are calling by the same name two forms which have probably developed independently, and thus loosing sight *in our nomenclature* of a fact of evolution, the indication of which facts is, according to the strict adherents of the actual intergradation principle, the main object of trinomial nomenclature. The question naturally occurs can we indicate in our nomenclature all these facts of evolution without seriously impairing the utility of our names as *names?*

The foregoing cases are those in which *actual* intergradation is either impossible or doubtful. Let us now consider some where it is admittedly a fact.

Mr. Ridgway has shown that all of our continental song sparrows pass imperceptibly one into the other where their ranges touch, and as a result we have the little speckled-breasted bird of the California salt-marshes listed as a subspecies of the big gray bird of Alaska, more than twice its size, and which any novice would regard as a perfectly distinct kind of bird.

In the quail also Mr. Nelson has shown intergradation between a whole chain of contiguous races reaching from the eastern United States to southern Mexico and therefore we must link together in a trinomial name our white-throated, barbreasted, bobwhite (*Colinus virginianus*) with a chestnut-bellied, black-throated, bird bearing no resemblance to it except in generic characters. And yet a race separated by some miles of country and not showing any actual intergradation with its nearest geographic ally, will be designated as a species with a binomial name, even though it be much more closely related to either of the above extremes than they are to each other! This practice to my mind loses sight of the primary object of nomenclature which I take to be the designation of a distinguishable form in nature by a name which, when we see or hear it, will recall that form to mind. Anyone seeing a trinomial name today has no idea whether the form denoted is a slight variation of the stock indicated by the specific name or something totally different perhaps occupying a region hundreds of miles distant, the intervening country being occupied by other forms between which by mere chance the thread of evolutionary development is not yet quite severed.

The result of this use of trinomials will tend to the complete abandonment of this useful form of name. In fact some writers on mammals have already practically lapsed into a pure binomial nomenclature. It seems to me that this tendency is very much to be regretted. A trinomial properly used means just twice as much as a binomial, and with the present practice of naming every slightly differentiated form, a purely binomial system will soon mean nothing except to the specialist on each group—the mind cannot place such a host of names. The trinomial on the other hand properly used gives at once, in the specific names, a clue to the general character of the form referred to.

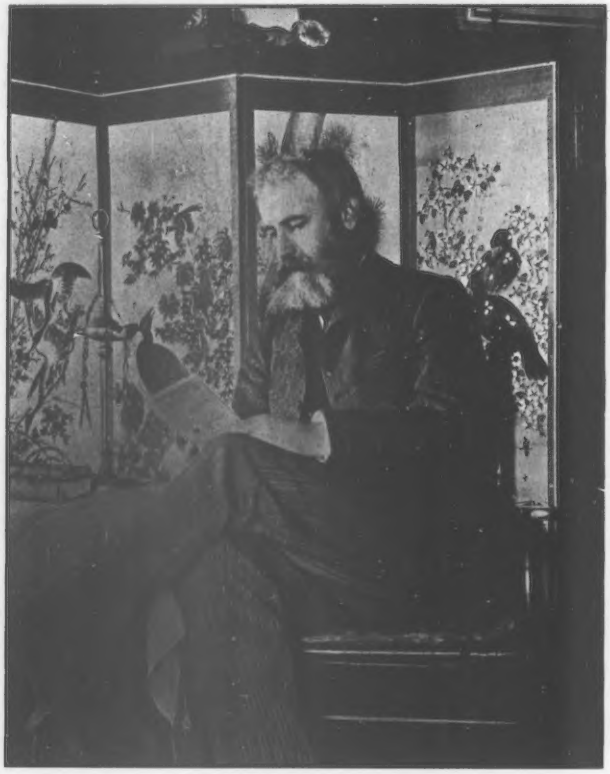
By continuing the practice of naming island and isolated forms by the *degree of difference* principle as is now done in the A. O. U. Checklist, and by extending this practice to the breaking up of such widely divergent series as the song sparrows and quail (which are comparatively few), I think that the valuable system of trimonials can be preserved. That the series just referred to must be broken *arbitrarily*, I admit, and that they *can* be broken arbitrarily by such a body as the A. O. U. Committee and still meet with general satisfaction there is, I think, no doubt. Genera have been so divided in numerous instances and the conditions prevailing in both cases are the same, i. e., current personal opinion.

The segregation of geographic races and the tracing of evolutionary development constitute one of the most valuable and instructive phases of modern systematic work, but we should realize that all the facts so discovered cannot be embodied in our nomenclature and that if we give up the effort to so embody them, we in no sense mean to belittle them.

To my mind we should aim to keep a name as nearly as possible to its original province and to remember that "nomenclature is a means not an end of zoological science."

The Author of "Birds of the Cape Region of Lower California."

MR. Brewster's recent noteworthy work on the "Birds of the Cape Region of Lower California" appeared just thirty years after his first paper, "Birds New to Massachusetts," in the *American Naturalist* for 1872. Since then a long and enviable list of papers has marked his active ornithological career—a list far too extensive to enumerate in this connection. Tho his systematic articles are many, it is safe to say that Mr. Brewster is best known by his



MR. WILLIAM BREWSTER.
(*Taken February 5, 1895.*)

faunal and life-history work. As a portrayer of bird life and bird ways he is without a peer.

Altho it is in New England that he now loves to 'ornithologize,' yet thru numerous field collectors his interests have reached to the farthest shores of the continent, and his many articles on western birds entitle him to a place among *our* most active workers.

A List of Water Birds of Lake Valley, Central Sierra Nevada Mountains, California.

BY MILTON S. RAY.

WHILE the land birds of this region have been fully treated by Chester Barlow in THE CONDOR (Vol. III, No 6) and by Wilfred Osgood and other writers in various magazines, little or nothing has been written regarding the water birds. I have spent two seasons in the valley, from June 4 to June 20, 1901, and from June 16 to July 3, 1902. My brother, William R. Ray, has accompanied me and in 1902 Olof Heinemann joined us.

The principal resort of the water birds is the marsh extending along the shore of Lake Tahoe between Rowlands and Tallac for about three miles and from one to three miles inland. They are also found sparingly, however, on Lake Tahoe and other adjacent lakes, and in the various meadows and along the numerous streams of Lake Valley. Most collectors have been prevented from working the marsh at Rowlands thoroughly owing to deep water, impenetrable tule-thickets and impassable patches of pond lilies. While inaccessible to a row-boat, we overcame these difficulties with a light portable canvas canoe which we used both years. This enabled us to go over the shallowest water or lily-beds with ease and thru the thick tules with some little difficulty.

Thanks are due Mr. Leverett M. Loomis for identifying a number of skins taken. Starred (*) species were collected.

Colymbus californicus. American Eared Grebe.* The grebe is a very rare bird about Lake Tahoe. None were observed in 1901, although many days were spent in the marsh at Rowlands. On June 29, 1902, a nest was found in the above marsh in about six feet of water among a sparse patch of tules. It was a floating mass of decayed vegetation and fastened to the reeds, and contained four well stained and almost fresh eggs.

Larus californicus. California Gull. This gull in all states of plumage is abundant on the lake about Rowlands but does not breed. On every visit immense flocks would lazily raise from the sand bar at the mouth of the river as we entered.

Sterna forsteri. Forster Tern.* Very common about Rowlands marsh where it nests in colonies of a dozen pairs or more. When the nesting grounds were approached the terns would fly up and hover about us, uttering their discordant cries, and some would dart uncomfortably close to our heads. The nests were built in various situations. The majority were built up of dry tules where the water is about five feet deep. When freshly built of green tules the nest formed a pretty picture. They were placed among tall thick tules or marsh grass and pond-lilies at their edge. Great difference existed in the nests, some being elaborate structures, while others were scantily made and placed on soggy masses of dead tules or floating logs. Numerous eggs were observed floating in the water about the nesting grounds and in a large number of sets taken the eggs were addled. A little before the first of June these terns start nest building, and fresh and partly incubated eggs were found all through the month. Even on my latest trip to the marsh, June 29, 1902, I did not observe any young of *forsteri*. The nests contained either one, two or three eggs and in about one hundred nests examined in 1901 and 1902, only one contained more, namely, five eggs. While the style of marking varies greatly, the ground color of brownish-drab and the blotches of brown, umber and lilac remain about the same. A single exception was a set

of three eggs, in which the ground color is pale green. An abundant fish in the marsh called "chubs" is the principal food of these birds, and they may be seen all over the marsh restlessly flying back and forth or hovering and dropping with a sudden splash after their prey.

Hydrochelidon surinamensis. Black Tern. This tern is even commoner than the preceding species. Occasionally substantial nests of tules in deep water like those of *forsteri* were found, but nearly all were scantily or carelessly made of fine tules and marsh grass and placed on floating driftwood in a foot or so of water. Like *forsteri* this bird usually lays one, two, or three eggs, but a single set of four were found. It nests a little earlier than Foster tern, small young being rather common at the end of June. The birds breed in colonies, from ten to twenty nests

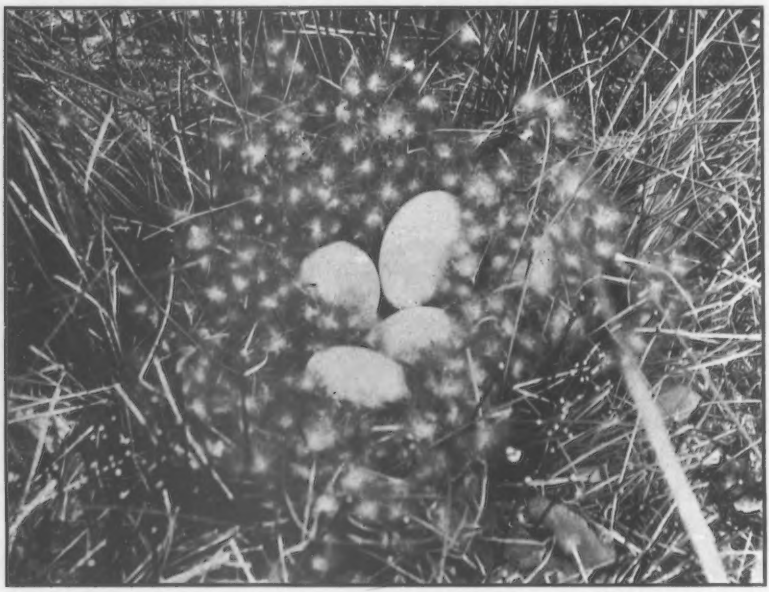


PHOTO BY O. HEINEMANN.

NEST OF THE MALLARD.

being found together. A single specimen of a tern with a white breast not larger than *surinamensis* was seen, but we were unsuccessful in our attempts to secure it.

Pelecanus erythrorhynchos. American White Pelican.* Abundant about Rowlands marsh but does not breed. I also noticed large flocks about the numerous mountain lakes in Desolation Valley (altitude about 8000 feet). By the protuberance on the bill the males can be distinguished for quite a distance.

Merganser serrator. Red-breasted Merganser. Recorded as a winter visitant at Lake Tahoe in Grinnell's "Check-list of California Birds."

Anas boschas. Mallard. By far the commonest duck about the marsh. Also numerous along the various streams and marshy meadows. The majority breed in May as several dead ducklings were seen and numerous nests were found, in

clumps of willows or among the wiry grass on sand-spits, profusely lined with down, containing egg shells.

Querquedula cyanoptera. Cinnamon Teal.* The teal is scarce. I found a single nest on June 19, 1902, containing four nearly fresh eggs. It was simply a hollow without any lining, on high ground in the marsh among tall grass.

Aix sponsa. Wood Duck. On nearly every visit to Rowlands I have noticed a single individual and young of this beautiful duck off the mouth of the river.

Aythya collaris. Ring-neck Duck. Recorded from Lake Tahoe in mid-winter in Check-list of California Birds. The above list of ducks could probably be trebled by observations in fall, winter, and spring.

Botaurus lentiginosus. American Bittern. A single specimen of this bird was seen on June 29, 1902, when it flew up a few feet from the canoe, in the tall grass where it had been feeding, but on every trip to the marsh or the vicinity the peculiar booming noise was heard.

Ardea herodias. Great Blue Heron. Noticed occasionally about Rowlands in June 1901 and 1902.

Fulica americana. American Coot. During June, 1901, this bird was common all over the reedy parts of the marsh nesting both in tall thick tules and among sparse reeds in almost open water where the nest could be seen for quite a distance. Some nesting records in 1901 are as follows: June 8, 9 eggs, incubation advanced; 7 eggs, incubation, one half; June 12, 8 eggs incubation begun, 7 eggs incubation advanced; one nest with young just emerging from the shell. Strange to say I did not see one of the birds in 1902.

Steganopus tricolor. Wilson Phalarope.* Rather common both about Rowlands and the marshy meadows near Bijou where two pairs had nests about the middle of June, 1902. They could not be located however, even with the aid of a field glass owing to the character of the country and the marvelous hearing and sight these birds possess. On June 14, 1901, I shot a female of this species for identification, and it was pitiful to see how her mate would not forsake the spot but continued circling around uttering its mournful and almost human cry. These birds were seen in flocks of half a dozen or more and also single pairs during June, and I am almost positive I observed a pair with young early in June, 1901, thus showing that the breeding season extends from May to July.

Actitis macularia. Spotted Sandpiper. Common about Rowlands as well as along the lake shore, various streams in the valley and numerous meadows. A nest, June 9, 1901, at Rowlands, among wiry marsh grass contained four fresh eggs, and one June 17, 1901, in the same location contained a like complement, also fresh, and curiously enough but half a foot away was a nest of the Killdeer with three eggs. One nest June 26, 1902, was found near Bijou by watching the birds from a distance with a field glass. It contained four eggs too far advanced in incubation to be of value.

Ægialitis vocifera. Killdeer. The killdeer frequents the same localities as *Actitis macularia* and is very abundant. Owing to the perception of these birds, however, the nests are not easily found unless considerable time is spent. A nest, a hollow scooped in the bare shingle on the lake shore at Rowlands on June 11, 1901, contained three fresh eggs, and one in a similar situation on June 22, 1902, contained the same number in the same condition.

The Summer Birds of Washoe Lake, Nevada.

BY FORREST S. HANFORD.

WASHOE Lake, Washoe Co., Nevada, is a typical Nevadan lake, with an area of eighteen square miles and an altitude of 5,045 feet above sea level. Its shores are barren of anything approaching trees, except for a few clumps of willows here and there. Extending along the eastern shore lie a chain of sand dunes rising to a height of thirty feet, and cut through in many places by numerous 'wash-outs.'

Here in the cliffs the bank swallows make their homes, and I have found many relics and arrowheads of the Washoe tribe of Indians who once made these small, wind-sheltered gullies their home. About half a mile back of these sand hills is the Washoe range of mountains, covered only with sage brush, the first of the desert ranges.

Passing around to the west side of the lake we find a country entirely different; here lies the fertile Washoe valley and two miles distant rise the Sierra Nevada, its pine forests and snow-capped peaks making a strong contrast to the desert country to the east. The tule fields are at the north and extend four miles, ending in Little Washoe Lake. The following short notes were taken during the months of May and June of the last two years.

Æchmophorus occidentalis. Western Grebe. About ten noted in May, 1900. I have tried shooting at them with a rifle but always with the result of seeing them disappear under the water at the flash of the gun.

Colymbus nigricollis californicus. American Eared Grebe. A set of nine eggs collected in June constitutes the first record of this grebe breeding at the lake.

Larus californicus. California Gull. One seen on shore with white pelicans.

Hydrochelidon nigra surinamensis. Black Tern. Not uncommon. Several pairs noted flying over tules where they probably breed.

Pelecanus erythrorhynchos. American White Pelican. About 50 pelicans were observed at the lake last year and the number had increased to 100 this year. Three eggs were found a foot under water in June, but no nests have been found for a number of years.

Anas boschas. Mallard. Breeds abundantly at the lake in May.

Chaulelasmus strepera. Galwall. Not common. Only a few pairs noted this year.

Nettion carolinensis. Green-winged Teal.

Querquedula discors. Blue-winged Teal.

Querquedula cyanoptera. Cinnamon Teal. All three of the above ducks were common breeders at the lake.

Dafila acuta. Pintail. Mr. J. Steinmetz tells me that the pintail has been observed at the lake several times.

Histrionicus histrionicus. Harlequin Duck. A male was taken at Frankstown near the lake and identified by Mr. Steinmetz.

Erismatura jamaicensis. Ruddy Duck. Noted quite a number of times in open lanes of water in tule fields, but appeared quite shy.

Branta canadensis. Canada Goose. A number of nests of this goose have been found at the lake in past years. In May 1900 a nest was discovered near the shore, containing the shells of eggs and was supposed to belong to this species.

Branta nigricans. Black Brant. Accidental. Early in May a pair was observed near shore of lake.

Botaurus lentiginosis. American Bittern. A single bittern was seen at the lake this year.

Nycticorax nycticorax nævius. Black-crowned Night Heron. A colony of these herons was discovered breeding in the middle of the tule field in May 1900. About 200 nests were counted and by the first of June they all contained young or incubated eggs. Only twenty herons were seen at the lake this year.

Rallus virginianus. Virginia Rail. Noted in marshy meadows on west side of lake.

Fulica americana. American Coot. Very common in tule fields.

Steganopus tricolor. Wilson Phalarope. Not uncommon on west side of lake. Found breeding close to shore.

Recurvirostra americana. American Avocet. A few pairs seen on west side of lake; probably breeding.

Himantopus mexicanus. Black-necked Stilt. Noted along west shore of lake in May and June.

Gallinago delicata. Wilson Snipe. Not uncommon in marshy fields on west side of lake.

Actitis macularia. Spotted Sandpiper. Common breeder along shores of lake.

Ægialitis vocifera. Killdeer. Abundant at lake.

Circus hudsonius. Marsh Hawk. A pair of these hawks observed at the lake in May 1900.

Archibuteo lagopus santi-johannis. American Roughleg.

Falco sparverius deserticolus. Desert Sparrow Hawk. These two hawks have been noted hunting through tule fields in June. The latter nests high up in the Sierras.

Bubo virginianus pallescens. Western Horned Owl. Noted in tule fields in June.

Speotyto cunicularia hypogæa. Burrowing Owl. One seen on fence post near lake in May.

Chordeiles virginianus henryi. Western Nighthawk. Noted flying over tule fields.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird.

Agelaius phœniceus. Red-winged Blackbird. These two blackbirds are common through the tules.

Sturnella magna neglecta. Western Meadowlark. Abundant in grassy meadows near lake.

Scolecophagus cyanocephalus. Brewer Blackbird. Very common around lake.

Ammodramus sandwichensis alaudinus. Western Savana Sparrow. Quite common on west side of lake, breeding close to shore.

Chondestes grammacus strigatus. Western Lark Sparrow. Not uncommon on west side of lake.

Spizella breweri. Brewer Sparrow. Very common in sage brush on east side of lake.

Amphispiza belli nevadensis. Sage Sparrow. A characteristic bird of the sage brush on east side.

Melospiza melodia montana. Mountain Song Sparrow. Noted with young in tules near the last of June.

Pipilo maculatus megalonyx. Spurred Towhee. Abundant in sage brush on east side of lake.

Oreospiza cholura. Green-tailed Towhee. Several noted in a patch of sage brush on south shore.

Petrochelidon lunifrons. Cliff Swallow.

Hirundo erythrogaster. Barn Swallow.

Clivicola riparia. Bank Swallow. All three of the above swallows found breeding near lake.

Geothlypis trichas occidentalis. Western Yellowthroat. They are quite common in the tules.

Oroscoptes montanus. Sage Thrasher. Found quite commonly in sage brush on east side.

Cistothorus palustris plesius. Western Marsh Wren. A very busy little wren in the tules.

Status of the Bicolored Blackbird in Southern California.

BY FRANK S. DAGGETT.

IT is safe to say that during the past ten years hundreds of eggs of the bi-colored blackbird (*Agelaius gubernator*) have been sent from Southern California, and all our collections contained skins of what was supposed to represent that bird.

When the interest in ornithology was first started in California and which culminated in the formation of the Cooper Ornithological Club in 1893, the principal authorities warranted the assumption that *gubernator* occurred in Southern California. Coues' Key gave the distribution as "Pacific Coast U. S. and British Columbia" while the A. O. U. Check-List states, "Pacific Coast district from Western Washington, south to Lower California," etc. With this for a basis we all looked for *gubernator*, and it was found, as we supposed, associated with *Agelaius phœniceus* of those days. The bird so selected was an immature-looking male, with buff lesser wing coverts, and black middle coverts, answering to the written descriptions of *gubernator*. There is more or less uncertainty as to the status of all our blackbirds, and in 1896 Mr. Grinnell made up a lot of adults and immatures, for transmission to Washington for identification, among them some belonging to the writer. Upon their return we found, among the immatures, several marked *gubernator*. This was long before Mr. Ridgway's revision of the blackbirds, but it confirmed our earlier decision and *gubernator* received a place in the List of Birds of the Pacific Slope of Los Angeles County with the following observation by Mr. Grinnell: "Several specimens of this form have been taken at Bixby and El Monte, and it may breed in this County, as it does commonly to the northward; but I have no reliable data, altho many eggs purporting to be of this bird have been sent from the County."

About a year ago Mr. Grinnell, in order to settle the question, sent me a pair of *gubernator*, in breeding plumage, collected by him in a locality of well known occurrence. The comparison at once threw out the birds which we had known as *gubernator*, and further investigation convinces me that they are what is now known as *A. p. neutralis* Ridgway.

I have examined all the available collections in Southern California, with the same results, and I can find no one here who can produce actual specimens of *gubernator* taken in the southern counties of California.

Unless some one produces specimens, it is safe to say that the bird does not occur here. Certainly the eggs sent out so freely from this part of the state, in years gone by, as *gubernator*, can safely be put down as of Mr. Ridgway's recently described *A. p. neutralis*, for most of them were taken in well known colonies, where none but *neutralis* are found today.

CORRESPONDENCE

On Certain 'Modern' Tendencies

EDITOR OF THE CONDOR:

In examining some zoological works published in the early part of the 19th century I have recently noticed several discourses which may be of interest to the readers of THE CONDOR. The numerous protests against the fine discrimination of species and subspecies which have been recently made in various zoological and particularly in ornithological journals are chiefly addressed to those who indulge in what are termed 'modern' tendencies. It seems, however, that neither the protests nor the supposed tendencies are quite sufficiently modern to share the title with storage electricity and wireless telegraphy. As early as 1820, Dewitt Clinton (Letters on the Natural History and internal Resources of the State of New York, pp. 156-157) published a long dissertation upon this subject. The following short extract indicates the 'deplorable' state of affairs then existing.

"This system [the Linnæan], when it came out of the hands of its great architect was recommended by its simplicity, and by its tendency to facilitate the acquisition of knowledge. In the progress of time it has become corrupted by the interpolations and sophistications of inferior workmen who have destroyed its beauty, deranged its symmetry, and undermined its strength. The multiplication of terms, the augmentation of synonymes, the creation of new genera, and the fabrication of new species, have overloaded the science with an Egyptian burden of terminology. Philosophy has been transferred from things to words, and the inventor of a new term, of specific or generic difference where none exists, has been absurdly considered as entitled to the honors of an important discovery. A new race of naturalists have started up, who confine their attention solely to verbal description, and who entirely overlook the habitudes and manners of animals, and the uses and characters of other organic beings, and of inorganic matter."

A few years later James E. Dekay, author of the well-known zoology of New York wrote as follows: [a] "New nominal species perplex the student, increase the labours of the critical naturalist, and render the study of natural history tedious and difficult. If it was generally understood that it is more meritorious to extinguish a single nominal species than to establish a dozen new ones, it would effectually check the *present mania* for making new species often on slight foundations. This also leads to an overweening anxiety to secure priority; and hence descriptions are liable to be drawn up in a crude and hasty manner, without reference to the co-ordinate characters."

In 1831, John Godman (Am. Nat. Hist. vol. I, pp. XV-XVI) presented the same ideas as follows: "Beginners of the study of natural history are generally liable to form erroneous conclusions, among which none is more common and prejudicial than that of mistaking the system of classification for the subjects classed, or in other words, the arrangement of the names for the things themselves, nomenclature for natural history. * * * * The mistake above pointed out is continually urging many who would be esteemed naturalists to the formation of new genera and species, founded on trivial, accidental, or imperfectly noted differences between creatures which, to all rational observers, appear the same. This retards science, and misleads individuals as to the character and objects of natural history, which, judged by the conduct of some who are regarded as authorities, would appear to be the science of magnifying trifles and bewildering the understanding. In natural history, as in other departments of human knowledge, none but sciolists are pedants; such persons struggle to impart to their implements the dignity and importance that should belong to the work alone, and, 'in self adoring pride securely mailed,' seek but to glorify themselves, considering the interests of science as nothing when weighed against the gratification of their own vanity."

The application of the foregoing is not far to seek and it would be superfluous to state it at length. Surely the systematists of today prefer the heritage they possess rather than that which would have been theirs if these ultra-conservative counsels had been followed to the letter.

WILFRED H. OSGOOD.

Washington, D. C.

A Protest

EDITOR OF THE CONDOR:

Kindly allow me to make a most emphatic protest against the useless and wasteful record of egg collecting in your journal, vol. IV, pp. 128-131, in a paper entitled "The Holbœll Grebe

[a] Address to The New York Lyceum, p. 76.

in Montana." The writer of the paper in question is an ornithologist of recognized ability who should stand for the conservation of bird life, but by his own story he worked for two weeks systematically and energetically, and the result was a small amount of the life history of a species that is rarely found breeding within the limits of the United States, and the collecting of probably every egg that was laid by the small colony of five pairs of grebes that had selected Swan Lake for a home. Twenty-eight eggs taken, some of them almost on the point of hatching, and for what,—that they might be measured to see if there was a fraction of an inch difference in the length or breadth of the empty shell, or to note if there was a slight variation in the shade of ground color. Could this not have been done without the sacrifice of twenty-eight young birds, and the consequent distress of the parents?

In my efforts for better bird protection I am often confronted with the statement that much useless and unnecessary collecting is done in the name of science. No one can have a higher appreciation of real scientific work than I accord to it, but the taking of every egg, of a rare breeder, in a small colony, is in no sense scientific, but on the other hand, it is wasteful and reprehensible. One typical set taken in 1902 would have been ample to establish the fact that the Holbœll grebe breeds in Montana. It would have been much more scientific to have spent the two weeks in obtaining some insight into the life history of this species; i. e., method of nest building, care of young, food habits, etc. These would have been valuable facts that would interest every other bird student in the country. The twenty-eight empty shells now represent only a devastated bird colony and a story of cruel wrong.

Very truly yours,

WM. DUTCHER.

New York, Jan. 5, 1903.

An Answer

EDITOR OF THE CONDOR:

The limit of temperate collecting has ever been a mooted question, and like many other phases of ornithology, it is likely that the subject will always be open for discussion. As my position on this question has been criticized, I shall try to define my ideas on the ethics of collecting, and to explain the circumstances regarding the particular instance in which I am brought to task.

In a collection of natural history specimens, open to examination and usable by competent persons, the material will conserve to the pleasure and gratification of more people than it will in its native condition of life and surroundings. To support this statement, I bring forward the note in the issue of Science for Jan. 23, 1903, page 159, saying that seven hundred thousand people had visited the New York Zoological Park last year, and that the aquarium is visited daily by fully five thousand persons. True, the Park contains living animals, but the principle holds true in collections of whatever nature. For one person who can get out into contact with nature, there are hundreds who must be content with seeing things in cabinets and collections. In the ordinary conditions of life, the number of people who come into actual touch with nature is few indeed; a short walk on Sunday afternoon, a glimpse of some bird by the roadside, or a peep into a nest in some dooryard, is all that such people get out of the vast wealth of environment. The majority of people are pleased with collections that bring the wildwood material to them, for then they see things that otherwise would never come under their observation. Say what we please, there is a place, and a very large place, for natural history collections, even of skins and eggs of birds, as a means of gratification for this large class of persons whom I have mentioned.

It is the mission of lower animal life to minister to the gratification of the higher. This law of nature is annunciated in the Great Book, and has ever been the basis of man's dealings with the inferior creatures. It is my creed that if a set of eggs can minister to the pleasure of any number of observers, there is no question of the collector's right; furthermore, if seven sets of eggs of any one species can serve a purpose in bringing other sets, difficult of access, into one's cabinet by way of legitimate exchange, again the collector's right is beyond moral question.

The purpose of bird protection, as I understand it, is the conservation of bird life for the end I have mentioned, the pleasure and gratification of those who can come into contact with nature in her wildwood home. Of course, there are economical and other arguments for bird protection, but beneath them all lie the idea that the birds are living creatures, having many faculties allied to the human, and that all life is sacred. But let us not sacrifice sense to sentiment, for all lower life is but a part of the great domain of environment, which is to react on the human mind and soul, and develop all our noblest faculties.

If the foregoing be true, the great test of the moral right of the collector is the proper use

of his material. If a systematist can take a series of skins, and use them to the development of an instinct or faculty which is divinely given, who has a right to question the morality of the action? If in my collecting I find a place for seven sets of eggs of the Holbœll grebe, who shall say that my work was wasteful and reprehensible, provided the material is usable? What constitutes wasteful collecting? Clearly, the taking of specimens that are unavailable, not usable, or unnecessary to the advancement of human pleasure or knowledge. Let us see whether the taking of the seven sets of grebe's eggs was really wasteful.

The collecting criticized was done under the direction of the University of Montana Biological Station. It is the desire of the director of that work to build up a museum for the University that will be a credit to such an institution; in other words, to form such collections of biological material as will serve the best purposes of collections at an educational center. During the past three summers my time has been given gratuitously to this end. While I have been left largely to my own plans of work, and therefore am ready to bear all censure for my actions, it has been the wish of the director that I collect largely, obtaining even more than duplicates of skins and sets, that the museum might have exchange material with which to increase its small collections. In this way about four hundred skins, and possibly seventy-five sets of eggs have been added to the museum. These eggs are the only ones in the museum.

Now seven sets of eggs of this grebe, nesting in limited numbers in the state, will give the University five or six sets to exchange. That the exchange can be made, is shown by the fact that applications have already been made to me for all the eggs, which are still in my hands and will be disposed of to the best interests of the University museum. Two sets at least should be in the University collection. The remaining sets represent value to the museum, will fall into the hands of appreciative collectors, will enhance the value of other collections, and will consequently serve the purpose for which all collections should be made and for which lower animal life was created.

Why take all the sets of eggs of this grebe that were to be obtained on this occasion? Why not take one typical set, as my friend suggests, and leave the remainder to the course of nature? Because of the very reason he mentions, its rarity in nesting within our borders. It is doubtful that I shall ever again have opportunity of taking eggs of this species, should it be necessary; and when opportunity presents itself but once in a life-time, is the collector reprehensible for taking seven sets of eggs of a rare breeder? Is he any more reprehensible than if he should take a set each year for seven years, should the opportunity successively present itself?

Furthermore, anyone who is familiar with the habits of the swamp-breeding birds knows the uncertainty of finding the birds in the same locality in succeeding seasons. Those who have visited the extensive Dakota marshes in successive seasons testify to the fact that where hundreds of the birds were breeding one year, not a bird could be found the next. Now when a colony of grebes is found, and there is need of taking the products of the colony, the collector would be very unwise to neglect the offered opportunity, for it is not likely to be repeated another season.

This grebe colony was found on a lonely lake, almost inaccessible to ordinary observers. It is more than likely that the bird life of the region will only serve the purpose of the enthusiastic collector and hunter, at least for years to come. The eggs of the birds there breeding are far beyond the reach of all except the few; why should not one season's product be brought and placed in collections where it will best serve the purpose of human study and observation?

There is a great deal of sentiment regarding the destruction of life by the egg-collector (scientific, of course). Much of this talk is mere bosh. It does not seem difficult to show that the taking of eggs as it is done by the real ornithologist has very little effect on the decrease of bird life. In fact, I am inclined to believe that the taking of the twenty-eight eggs in this grebe colony will have very little effect upon the aggregate bird life of the region. Two second sets were taken, and it is unlikely that the owners of these eggs would nest again. The others were first sets, and it is probable that the owners would nest immediately, as conditions there remained unchanged when I left on the 20th of June. My observations elsewhere show that grebes are not loath to nesting late into July. If the birds had not been molested, each pair would likely have reared its brood. What difference can it make in the end whether the brood comes from a first or a second set? Candidly, I fail to see in this collecting the sacrifice of twenty-eight young birds, nor can I admit that the twenty-eight shells represent only a devastated bird colony and a story of cruel wrong.

We are human, and are therefore liable to err. If I have erred on the side of intemperate collecting, I am ready to acknowledge my fault, and I shall ever thank my friend for calling attention to my error. If the foregoing explanation is not satisfactory, let me offer in further extenuation the plea of our master in ornithology, Dr. Elliott Coues, that of "worthiness of motive," and let the fault be covered by the broad mantle of charity.

Respectfully,

P. M. SILLOWAY.

Lewiston, Montana, Feb. 2, 1903.

THE CONDOR

An Illustrated Magazine of Western Ornithology

Published Bi-monthly by the Cooper Ornithological Club of California

WALTER K. FISHER, Editor, Palo Alto
JOSEPH GRINNELL, Business Manager and Assistant Editor, Palo Alto
FRANK S. DAGGETT, Associate Editor

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EDITORIALS

The time for the Tenth Anniversary Meeting is rapidly approaching. Every member should make a serious attempt to be present, for it is likely no opportunity of a similar nature will again present itself till our Twentieth Anniversary—and that is too uncertain to be counted on! Such a meeting as we hope for cannot fail to have a very wholesome influence, both upon the members, and upon the future work of the club. We are so scattered that it is only a comparatively few who enjoy the frequent meetings. Those who live at a distance are thus denied the benefits of the social side of the club—the association of members and the interchange of ideas and schemes which characterize our informal meetings.

TENTH ANNIVERSARY MEETING

The California meeting of the American Ornithologists' Union seems likely to be a success, as a circular describing the excursion has already been sent out by the committee. From this circular we learn that the "plan is to leave Chicago May 3, to reach San Francisco on or about May 13, and to hold a special meeting May 15–16 in conjunction with the California members of the A. O. U. and the members of the Cooper Ornithological Club." Already a local committee of arrangements has been appointed.

At the last meeting of the Northern Division, March 7, it was definitely decided that the Tenth Anniversary Meeting should be held at the Academy of Sciences in San Francisco, May 15 and 16, in conjunction with this special meeting of the A. O. U. The advantage of this arrangement is at once evident, and every one should be present, not only to make the two meetings a success in point of interest, but to become acquainted with those who attend. It is not often that our Eastern friends brave a journey to the "wild and wooly," and we should one and all assemble to help make their trip to the West both enjoyable and long-to-be-remembered.

A committee now has the matter of the meeting and program in hand. You are cordially invited to write to the editor on the subject, so that we may gain some idea of who are coming. Later when plans are perfected notices will be sent to each member.

The A. O. U. Bird Bill, thru the activity of Mr. Wm. Dutcher, Dr. T. S. Palmer, Professor Wm. E. Ritter and others, has been introduced into the State Legislature. There seems to be a strong sentiment in favor of the measure, which should insure its speedy passage. The bill, which aims to give an adequate protection to our non-game birds, is essentially like the Cooper Club measure which was introduced two years ago, but which failed, as will be remembered, to secure the governor's signature. As the legislature adjourns within a few days, the fate of the bill will shortly be made known thru the daily press.

THE A. O. U. BIRD BILL

Both the editor and the business manager will be far removed from the scene of action during the coming summer. It is therefore requested that all longer articles intended for the July issue be mailed to Palo Alto not later than May 15. It will be necessary to make up the July number very much earlier than is usual, as the proof sheets will have to make a round trip of some 6000 miles. As we examine at least three proofs the reason for the request is evident.

A NOTICE

We regret that thru lack of space the FIELD AND STUDY section has been omitted in this issue. Many short notes will appear in the May number.

Owing to an unfortunate mistake the advertising pages in the January issue were numbered 31 and 32. These numbers have been duplicated in the present issue (frontispiece, as we do not publish 'plates').

It is probable that we will hold the May issue over a few days in order to include a report of the meetings. As we expect plenty of members here on the 15th the issue will not be missed!

Notice to Members of Southern Division.

At the meeting of this division held on February 28, 1903, a committee was appointed to make preliminary arrangements toward the revision of Grinnell's "Birds of Los Angeles County." It is proposed to collect all material notes, etc., that will in any manner bear upon the species known to occur in the territory outlined in the above mentioned list. Members are especially requested to report all early and late nesting dates that come under their notice during the coming season with whatever migratory notes they may have.

A more detailed account of the work ex-

pected to be done will be published in the May CONDOR.

HOWARD ROBERTSON,
49 Courthouse, Los Angeles.

An Open Letter.

ALTONA FARM, LONGMONT, COLO.,
FEB'Y 10, 1903.

MY DEAR FISHER:

I am so enthused over the last issue of THE CONDOR that I must write you a few lines, to try and spread my enthusiasm. Barring the unfortunate necessity of the "Memoriam" to our dear friend Barlow, the issue was certainly a "cracker-jack"—in fact the culmination of many good numbers which came last year. The extra good paper you are using in the make-up may be a trifle expensive now, but will prove cheap in the long run. It will stand the test of time, binding and usage much better than some journals of reference now twenty years old which were not published with the same foresight.

Periodically someone gets off a howl about the "Good old days," and "the O. and O.," "What it used to be" and "Why cannot we have something as good now." But THE CONDOR of today is a much better paper than the "O. and O." ever was. We must not forget that we are twenty years older than we were in those "Good old days," and possibly with our advanced information we would not now enjoy the "O. and O." as we did then. It certainly *was* delightful and amusing reading for us: the narratives of those "big sycamore climbs" and "stick in the mud" collecting trips. But as a magazine for reference, what is its price now compared to back copies of "The Nidologist" and the "Bulletin of the Cooper Club?" The "O. and O." *did* hold the old crowd together. That was a good feature and that is what our Eastern friends realize is lacking in the journals now in their hands.

Lattin's little sheet is filling its place and so is the "Auk." "Bird-Lore" and the "Osprey" are trying to do justice to the medium, with the result that the collectors are divided between the two and are not in unison. Your country out on the coast, to-day, has the best collectors, the best union, and consequently the best journal.

Last fall I experienced delightful visits with many of the "Old Boys," Jackson, Parker, Norris, Crandall and several others; men whom you will remember assisted in the make-up of the "O. and O.," and I talked CONDOR to them pretty strong. They all have great admiration for the workers out on the coast, and for your publication. They regret by contrast, their own lack of union and the decrease of good field work in the East. Since you publish as "A Magazine of Western Ornithology" do you care to open your columns to the *use* of Eastern subscribers?

Oology was *primary* with us in the "Old Days," now it is *secondary* (to Ornithology). That fact has worked the change in the character of our reading matter, and those old collectors, who have not put the scalpel in a more convenient place on their table than the drill and blow-pipe, are behind the times and thereby deplore the loss of the old "O. and O." At the same time I find they value a set of eggs coming from a man with a good "skin record" like Anthony, McGregor or Grinnell about six times as much as they do a set from some of "Lattin's boys." Fisher! you should have seen the look of satisfaction on Crandall's face as he pointed out to me certain sets of eggs, here and there, with the remark that "they were some of Chester Barlow's collecting."

Cordially yours,
FRED M. DILLE.

Mr. Dille's pertinent inquiry in his "open letter" as to whether THE CONDOR intends to adhere strictly to the policy enunciated in its title "A Magazine of Western Ornithology" may be answered in the affirmative. While we are always glad to publish notes and papers of a *general nature* from our eastern friends, those articles which are faunal or biographical must be distinctly western, or in other words must fall within our "geographical limits." When the present editor was associated with the late Chester Barlow, it was decided that these limits should arbitrarily extend from the west coast eastward to *include* Montana, Wyoming, Colorado, New Mexico and Texas. Outside of the United States our scope is somewhat elastic, and comprises the Pacific Coast generally, and islands of the eastern Pacific.

The right sort of bird material is limited, and we do not care to encroach on the rightful territory of eastern ornithological journals. The Cooper Club, too, is a distinctly western organization, and it is believed that to be successful, the more western its magazine the better.

Obituary.

THOMAS E. SLEVIN.

Thomas E. Slevin died at his home in San Francisco, December 23, 1902. He was born January 20, 1871, in New York City, and came to the Pacific Coast in 1878. His love of natural history began when he was a mere boy and exhibited itself in a characteristic way. The first fruits of his ornithological endeavors are still preserved. From his father, the late T. E. Slevin, L. L. D., a founder of the Geographical Society of the Pacific Coast, he in-

herited his tastes for natural science, and his uncle was also much interested in birds.

Mr. Slevin spent much of his time in collecting faunal series, as his summers would permit, among the birds of the foothills of the Coast Ranges, and the Sierras. He was an expert workman, and a careful observer. His notebooks show much painstaking labor, in very full notes on the habits and nidification of many species. He spent the early part of 1902 in Arizona, in the hope of improving his lately declining health. On his return in May he began the recataloging of his large collection. In November he came to Haywards in hopes of some slight change, and during his short stay in the town, his love of the fields never lagged.

Mr. Slevin was unassuming and modest, and not given to publicity in his work. He became a member of the Cooper Club in January, 1899, and was also an associate member of the American Ornithologists' Union. - W. O. E.

GEORGE SHOENBERGER CHAMBLISS.

George Shoenberger Chambliss, a member of the Cooper Ornithological Club, died at his residence at Altadena, Los Angeles County, Cal., February 15, 1903.

Those of us who were intimately acquainted with him had learned to admire his sterling qualities and by them his loss will be keenly felt.. He was not a collector of birds but a close student of their habits, and in many ways gave encouragement and substantial aid to those who were engaged in active work, especially during the past few years of his life when the inroads of disease prevented him from taking active part himself. It was during this period that he founded what is known as the Chambliss Ornithological Library, coutaining many rare and out of print works of the earlier ornithologists including Andubon's 1840-1844 Edition of American Ornithology. This library is in constant use by members of the club and others interested in ornithology and forms a nucleus which in time may become the leading ornithological library of the southwest. It is already a lasting monument to the part he took in gaining knowledge of our birds and to his generosity in placing it where it will do the most good. F. S. D.

THOMAS MCILWRAITH.

Thomas McIlwraith, one of the founders of the American Ornithologists' Union died at his home at Hamilton, Ontario, January 31, 1903. He was born at Newton, Ayr, Scotland on Christmas day, 1834. In 1853 he came to Canada to superintend the gas works at Hamilton. As early as July, 1860, and January, 1861, he published lists of the birds in the Canadian Journal, and in 1866 a more complete paper in the Bulletin of the Essex Institute on the birds of Ontario. The two editions of the "Birds of Ontario" appeared in 1886 and 1894.—A. K. F.

Minutes of Club Meetings.

NORTHERN DIVISION.

JANUARY.—The annual meeting of the Northern Division was held at the residence of W. Otto Emerson near Haywards, January 10, President Grinnell presiding, eighteen active members and seven visitors present. The program for the evening was first presented as follows: In Memoriam: Chester Barlow, H. R. Taylor; Remarks on the Ornithological Writings of Chester Barlow, Joseph Grinnell; The Conditions of Bird Study in the Mississippi Valley, C. R. Keyes.

The following were elected to active membership in the Club: Henry W. Fowler, Palo Alto; John M. Miller, Stanford University; Agnes Frisius, Alameda. Four applications for active membership were received, from Theo C. Zschokke, Palo Alto; Lloyd Newland, Palo Alto; Herbert Brown, Yuma, Arizona; S. B. Show, Stanford University.

Officers of the Club for 1903 were elected as follows: President, H. R. Taylor; senior vice president, W. Otto Emerson; junior vice president, Chas. S. Thompson; treasurer-business manager, Joseph Grinnell; secretary, C. R. Keyes. Mr. Taylor then took the chair and appointed Mr. Walter K. Fisher as editor of the Club's official organ and also as an additional member of the committee on arrangements for the Club's tenth anniversary meeting. After a dinner, and an informal exhibit of photographs by Mr. Finley and Mr. Beck, the Club adjourned to meet with President Taylor in Alameda on March 7.

C. R. KEYES, Secretary.

SOUTHERN DIVISION.

JANUARY.—The January meeting of the Southern Division was held on the 31st at the residence of H. J. Lelande, Los Angeles, with Mr. Daggett presiding. The following members were present: Messrs. Renwick, Richardson, Howard, Daggett, Swarth, Robertson and Lelande. Mr. Herbert Brown whose name was proposed for membership at the January meeting was duly elected. The secretary read a communication from Rev. F. Reiser tendering his resignation as a member of the club. On motion the resignation was accepted. A very interesting paper by Mr. C. S. Sharp, "Some Unusual Nests of the Bullock Oriole," was read and photographs of nests exhibited. A paper on "Bird Notes from Eastern California and Western Arizona" by Mr. F. Stephens was read by Mr. Daggett. After discussing various bird subjects the meeting adjourned.

H. J. LELANDE, Secretary.

WANTED—Every dealer and collector to send me his address that I may send out *sample* sheets of my *Standard Field Note* and *Data Blank Books*, endorsed by advanced collectors and dealers. Recommended by Ornithological Clubs. "All answered." Address,

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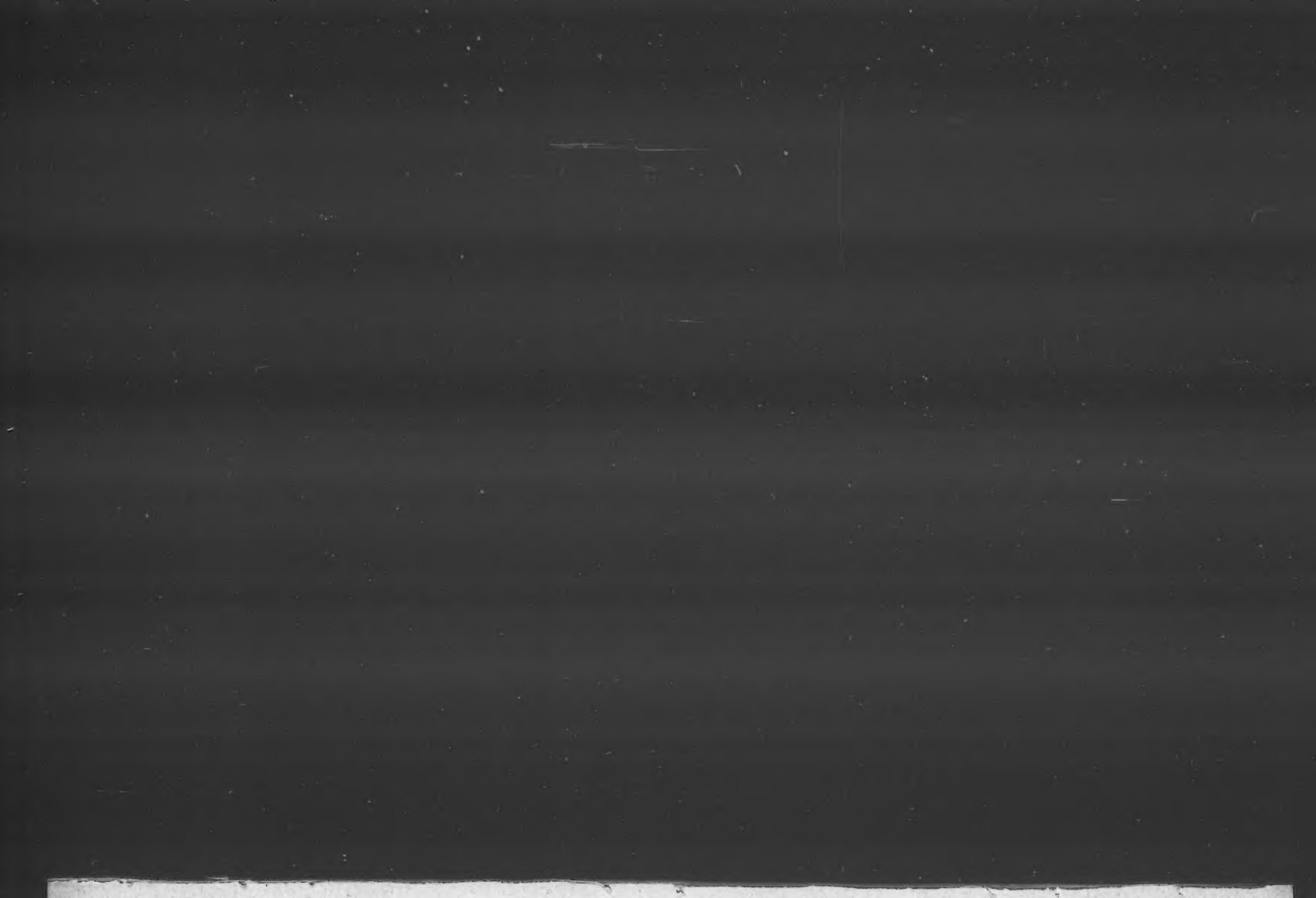
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